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09/879,438	06/12/2001	Michael Miettinen	442-010339-US(PAR)	3541

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425 Post Road
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EXAMINER

PILLAI, NAMITHA

ART UNIT	PAPER NUMBER
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2173

DATE MAILED: 07/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/879,438

Applicant(s)

MIETTINEN ET AL.

Examiner

Namitha Pillai

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 May 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 17-32, 34-38 and 40-56 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 17-32, 34-38 and 40-56 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

1. The Examiner acknowledges Applicant's submission on 5/13/05, wherein claims 24 and 52 have been further amended to include features previously disclosed in claim 17. Claims 53-56 have also been newly added to the set of pending claims. All pending claims have been rejected, wherein the previous rejection is maintained.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claim 17-32, 34, 38, 40, 44-46, 47, 49 and 51-52 are rejected under 35 U.S.C. 103 (a) as being unpatentable by applicant submitted IDS issued to 1999 IEEE Shadow Gestures: 3D Hand Pose Estimation using a Single Camera in view of Easty et al. (USPN: 6,448,987) hereinafter Easty.

As per claims 17 (method), 24 (device), and 52 (user interface); Shadow Gestures discloses a method for recognizing a selection a set of at least two alternatives as the technique of moving the thumb and the index finger (see page 484, right col., lines 1-2), the method comprising:

Determining the positions corresponding to each alternative in the space surround a user on the basis of their distance and direction with respect to the user so that the locations of the

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positions remain substantially the same with respect to user irrespective of the location of the user is taught by Shadow Gestures as the technique of an input interface to applications that require multi-dimensional control (see page 479, left col., lines 57-58) wherein a light source to cast the shadow of a hand and use a single camera to image both the hand and its shadow.

Features derived from projections of the hand and the shadows are then used to compute 3D position and orientation (see page 479, right col., lines 17-21) and the geometry of the shadow formation calculation (see page 483, left col., line 23 to right col., line 39 and see Fig. 7)

Allowing the user to carry out a first movement for moving a member of the body to a position corresponding to an alternative the user desires is taught by Shadow Gestures as the technique of user controls the robot arm by moving the thumb (see page 484, right col., line 1);

Recognizing a second movement carried out by the user in the position corresponding to the alternative the user desires is taught by Shadow Gestures as the technique of user controls the robot arm by moving the thumb and the index finger (see page 484, right col., lines 1-2);

In response to the second movement, recognizing the selection the user desires as completed is taught by Shadow Gestures as the technique of selecting simple primates from a menu and manipulating them (see page 484, left col., lines 50-51 and see Fig. 8);

Providing the recognizing selection as an output is taught by Shadow Gestures as 3D Scene in Fig. 8

Shadow Gestures, however, does not disclose the limitation of wherein said positions are sectors on an actuate area and first movement comprises moving the member of the body to a certain sector on said arcuate area.

Easty discloses the limitation of wherein said positions are sectors on an arcuate area and movement comprises moving the member of the body to a certain sector on said arcuate area as the technique of the main feature of menu structure for the GUI comprises two or more concentric rings each representing a level of the menu item system. Each menu ring comprises a plurality of icons identifying the menu item. The icons on an outer menu ring represent the categories of digital contents offered through the digital content delivery system, such as television, movies, music or the like (see col. 2 line 62 to col. 3 line 1), in the illustrated embodiment, the icons 11a and 12a on each menu ring 11 and 12 have arcuate shapes of substantially equally spaced along the respective circles (see col. 4, lines 29-32), and when an icon 11a is selected from the outer ring 11, in addition to rotating the outer ring to the new setting, the inner ring 12 is displayed with appropriate icons identifying the available subcategories associated with the selected category. For example, if the “music” category is selected from the outer ring 11, the icons displayed on the inner ring will include rock, classical, top 40, Jazz (see col. 5, lines 45-51 and see Fig. 1b).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to include Easty’s teaching of wherein said positions are sectors on an arcuate area and movement comprises moving the member of the body to a certain sector on said arcuate area into that of Shadow Gestures’ invention. By doing so, the system would be enhanced by capable of characterizing digital content and its hierarchically associated information into different classes and thus allowing those digital contents delivery to an end user based on user’s selection.

As per claim 45 (system), due to the mostly similarity of this claim to that of claim 17 (method), except for the system comprising: a central processing unit, a three dimensional display device, the central unit comprising communication means for communicating positions corresponding to selection alternatives to the three dimensional display device are taught by Shadow Gestures as the techniques of our system operates at 60 HZ on a SGI Indy (see page 479, right col., line 40) to compute 3D position and orientation (see page 479, right col., line 21) for the user control up to seven parameters (gripper's position, orientation and jaw-separation) by natural finger movement (see page 479, left col., lines 20-22). This claim is therefore rejected for the reasons as set forth above.

As per claims 18 (method) and 25 (device), the limitation of indicating to the user at least once the positions corresponding to the alternatives as showing virtual images in each position is taught by Shadow Gestures as the technique of virtual fly-thru's over terrains (see page 484, right col., lines 7-8 and see Fig. 9). These claims are therefore rejected for the reasons as set forth above.

As per claims 19 (method) and 26 (device), the limitation of demonstrating to the user the alternative indicated at any given time is taught by Shadow Gestures as the technique of real-time gesture recognition and hand tracking system that can be used as input interface to applications that require multi dimensional control (see page 479, left col., lines 26-29). These claims are therefore rejected for the reasons as set forth above.

As per claims 20 (method) and 27 (device), the limitation of recognizing the second movement contactlessly is taught by Shadow Gestures as the technique of virtual fly-thru's over terrains (see page 484, right col., lines 7-8 and see Fig. 9). These claims are therefore rejected for the reasons as set forth above.

As per claims 21 (method) and 28 (device), the limitation of wherein the first movement is the movement of the user's hand is taught by Shadow Gestures as the technique of user controls the robot arm by moving the thumb and the index finger (see page 484, right col., lines 1-2). These claims are therefore rejected for the reasons as set forth above.

As per claim 22 (method), the limitation of carry out the first function to the output is taught by Shadow Gestures as the technique of controlling robot arm by moving the thumb (see page 484, right col., lines 1-2 and see 3D Scene in Fig. 8). This claim is therefore rejected for the reasons as set forth above.

As per claim 29 (device), the limitation of carrying out a first function in response to the second movement is taught by Shadow Gestures as the technique of controlling robot arm by moving the thumb and index finger (see page 484, right col., lines 1-2 and see 3D Scene in Fig. 8). This claim is therefore rejected for the reasons as set forth above.

As per claims 23 (method) and 30 (device), the limitation of allowing the user to carry out certain second activity with a specific third movement of the member of the body is taught

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by Shadow Gestures as the technique of an interface to 3D video games where users can navigate by finger-pointing. The user can also fire guns using the “click” gesture and open doors with the “reach” gesture (see page 484, right col., line 12 to page 485, left col., line 2). These claims are therefore rejected for the reason as set forth above.

As per claim 31, the limitation of recognizing the second movement carried out by the user in the position are adapted to be attached to the user is taught by Shadow Gestures as the technique of user controls the robot arm by moving the thumb and the index finger (see page 484, right col., lines 1-2) for selecting simple primates from a menu and manipulating them (see page 484, left col., lines 50-51) of 3D video games (see page 484, right col., line 13). This claim is therefore rejected for the reason as set forth above.

As per claims 32 (device) and 46 (system), Shadow Gestures discloses the invention substantially as claimed above. Shadow Gestures, however, do not disclose the limitation of wherein the device comprises at least one of the following: mobile station, a computer, a television apparatus, a data network browsing device, an electronic book, and an at least partly electronically controlled vehicle.

Easty discloses the limitation of wherein the dice comprises a computer, a television apparatus, an electronic book as the technique of categories of digital contents offered through the digital content delivery system, such as television, movies, software, books, music or the like (see col. 2 line 66 to col. 3 line 1 and see Fig. 1a).

It would have obvious to one having ordinary skill in the art at the time the invention was made to include Easy's teaching of digital content delivery system into that of Shadow Gestures invention. By doing so, the system would be enhanced by capable of connecting a device to digital contents information and allowing user to select content based on user desired manner.

As per claims 38 (method) and 44 (device), the limitation of determining the positions corresponding to each alternative in the space surrounding a user also on the basis of their distance with respect to the user is taught by Shadow Gestures as the technique of a light source to cast the shadow of a hand and use a single camera to image both the hand and its shadow. Features derived from projections of the hand and the shadows are then used to compute 3D position and orientation (see page 479, right col., lines 17-21) and the geometry of the shadow formation calculation (see page 483, left col., line 23 to right col., line 39 and see Fig. 7). These claims are therefore rejected for the reasons as set forth above.

As per claim 47, the limitation of recognizing is a camera is taught by Shadow Gestures as the technique of we presented a one camera system that recognizes three gestures and tracks the user's hand (see page 485, left col., lines 31-32). This claim is therefore rejected for the reasons as set forth above.

As per claims 34 (method), 40 (device), and 49 (system). Shadow Gestures discloses the invention substantially as claimed above. Shadow Gestures, however, does not disclose the limitation of wherein arcuate area is selection disc.

Easty discloses the limitation of wherein arcuate area is selection disc as the technique of the main feature of menu structure for the GUI comprises two or more concentric rings each representing a level of the menu item system. Each menu ring comprises a plurality of icons identifying the menu item. The icons on an outer menu ring represent the categories of digital contents offered through the digital content delivery system, such as television, movies, music or the like (see col. 2 line 62 to col. 3 line 1).

It would have obvious to one having ordinary skill in the art at the time the invention was made to include Easty's teaching of wherein arcuate area is hierarchical selection menu disc into that of Shadow Gestures' invention. By doing so, the system would be enhanced by capable of allowing user option to select any desired menu item in the multi levels concentric menu based on user desired.

As per claim 50, the limitation of wherein the three dimensional display device and the means for recognizing are comprised in the same unit is taught by Shadow Gestures as the technique of we presented a one camera system that recognizes three gestures and tracks the user's hand in 3D (see page 485, left col., lines 31-32). This claim is therefore rejected for the reasons as set forth above.

Referring to claims 53-56, Shadow Gestures discloses allowing the user to do the first movement of a member of the body allows the user to move a first member of the body and the

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recognizing of the second movement recognizes the movement of a second member of the body (page 480, column 1, lines 15-17). Shadow Gestures discloses that the first and second members of the body are a common member of the body of the user and the first member of the body the body is a hand and the second member of the body is the fingers of the hand (page 480, column 1, lines 15-19), wherein one member includes selecting with one finger, wherein another step previous to that discloses reaching out with a hand, including all the fingers.

3. Claim 48 is rejected under 35 U.S.C. 103(a) as being unpatentable over in view of applicant submitted IDS issued to 1999 IEEE Shadow Gestures: 3D Hand Pose Estimation using a Single Camera in view of Easty et al. (USPN: 6,448,987) hereinafter Easty and further in view of Kumar et al. (USPN: 6,624,833) hereinafter Kumar.

As per claim 48, Shadow Gestures- Easty discloses the invention substantially as claimed above. Shadow Gestures- Easty, however, do not disclose the limitation of wherein the means for recognizing is a shape tape.

Kumar discloses the limitation of recognizing is a shape tape as the technique of the system 10 can of course be utilizing with other types of information processing devices (see col. 5, lines 33-34).

It would have obvious to one having ordinary skill in the art at the time the invention was made to include Kumar's teaching of recognizing is a shape tape into that of Shadow Gestures- Easty combined invention. By doing so, the system would be enhanced by capable of allowing user to select shape tape device for recognizing and recording user movement in virtual environment.

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4. Claims 35-37, 41-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over in view of applicant submitted IDS issued to 1999 IEEE Shadow Gestures: 3D Hand Pose Estimation using a Single Camera in view of Easty et al. (USPN: 6,448,987) hereinafter Easty and further in view of Selker (USPN: 6,549,219).

As per claims 35 (method) and 41 (device), Shadow Gestures-Easty disclose the invention substantially as claimed above. Shadow Gestures-Easty, however, do not disclose the limitation of the first movement is a substantially horizontal movement of the hand to a certain sector of an arcuate area situated substantially in horizontal plane.

Selker discloses a certain sector of an arcuate area situated substantially in horizontal plane as the technique of a multiple level pie menu. As with the concentric menu system of Fig. 1, the menus are separate into multiple levels of importance. However, in this concentric level 1 is split into multiple menu selections 11, 12, 13, and 14 (see col. 3, lines 44-48 and see Fig. 2).

It would have obvious to one having ordinary skill in the art at the time the invention was made to combine the teaching of the first movement is a substantially horizontal movement of the hand introduced by Selker into that of Shadow Gestures-Easty combined invention. By doing so, the system would be enhanced by capable of allowing user option to perform stretch out movement of the thumb and select any desired menu item in the pie menu based on user 's desired manner.

As per claims 36 (method) and 42 (device), Shadow Gestures-Easty disclose the invention substantially as claimed above. Shadow Gestures-Easty, however, do not disclose the

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limitation of the second movement is a substantially vertical movement of the hand at said certain sector.

Selker discloses the limitation of certain sector as the technique of a pie menu wherein highest popularity based on a historical analysis is placed in the level 1 circle 10. Level 2 receives a secondary menu item 20 of less importance (see col. 3, lines 39-41 and also see Fig. 1).

It would have obvious to one having ordinary skill in the art at the time the invention was made to combine Selker teaching of the second movement is a substantially vertical movement of the hand into that of Shadow Gestures-Easty combined invention. By doing so, the system would be enhanced by capable of allowing user option to perform fly through movement of the hand and select any desired menu item in the pie menu based on user desired manner.

As per claims 37 (method) and 43 (device), Shadow Gestures discloses the invention substantially as claimed above. While Shadow Gestures discloses the second movement as the technique of the user stretches out the thumb and the pointing finger and initiates flying by moving the hand (see page 484, right col., lines 8-10). Shadow Gestures, however, does not disclose the limitation of the second movement is placing a hand into a certain position at said certain sector.

Easty discloses the limitation of placing a hand into a certain position at said certain sector as the technique of when an icon 11a is selected from the outer ring 11, in addition to rotating the outer ring to the new setting, the inner ring 12 is displayed with appropriate icons identifying the available subcategories associated with the selected category. For example, if the

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“music” category is selected from the outer ring 11, the icons displayed on the inner ring will include rock, classical, top 40, Jazz (see col. 5, lines 45-51 and see Fig. 1b).

It would have obvious to one having ordinary skill in the art at the time the invention was made to combine Easty teaching of user selection into that of Shadow Gestures’ teaching of the second movement invention. By doing so, the system would be enhanced by capable of allowing user option to perform second movement and select any desired menu item in the pie menu based on user’s desired manner.

5. Claim 51 is rejected under 35 U.S.C. 103(a) as being unpatentable over in view of applicant submitted IDS issued to 1999 IEEE Shadow Gestures: 3D Hand Pose Estimation using a Single Camera in view of Easty et al. (USPN: 6,448,987) hereinafter Easty and further in view of applicant submitted IDS issued to Tomi Engdahl, 1999: 3Dglasses and other 3D display device.

As per claim 51, Shadow Gestures-Easty disclose the invention substantially as claimed above. Shadow Gestures-Easty, however, do not disclose the limitation of the three-dimensional display device is virtual glass.

Engdahl disclose the limitation of the three dimensional display device is virtual glass as the technique of the 3D material can be stored to any standard color video media and viewed with normal display devices as long as you wear the right color filter glasses (see page 1, lines 30-31).

It would have obvious to one having ordinary skill in the art at the time the invention was made to include Engdahl’s teaching of virtual 3D glass into that of Shadow Gestures-Easty combined

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invention. By doing so, the system would be enhanced by capable of allowing user to use 3D virtual glasses for viewing color video media.

Response to Arguments

6. Applicant's arguments filed 5/13/05 have been fully considered but they are not persuasive.

With respect to Applicant's arguments that Shadow Gestures does not disclose positions corresponding to alternatives would be determined in respect of the user, irrespective of the location of the user. The claims disclose the use of user information wherein user information is used but user location is not relevant. Shadow Gestures does disclose the use of user data including gesture and hand movements but further discloses that the user location wherein the location can be anywhere, wherein the location would be further calculated without regard to any limits to the user's location. Shadow Gestures also clearly points out that positions determined are based on user data but is also user independent.

With respect to Applicant's arguments that Shadow Gestures does not disclose selection by a member of a body with alternatives corresponding to some positions. Clearly, the description found in Shadow Gestures discloses the use of a user's hands and fingers, wherein representing a member of a body, wherein the selection of alternatives or options using the member of the body has been clearly established in Shadow Gestures.

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Responses to this action should be submitted as per the options cited below: The United States Patent and Trademark Office (Office) requires most patent related correspondence to be: **a)** faxed to the Central FAX number (571-273-8300) (updated as of July 15, 2005), **b)** hand carried or delivered to the Customer Service Window (located at the Randolph Building, 401 Dulany Street, Alexandria, VA 22314), **c)** mailed to the mailing address set forth in 37 CFR 1.1 (e.g., P.O. Box 1450, Alexandria, VA 22313-1450), or **d)** transmitted to the Office using the Office's Electronic Filing System. On July 15, 2005, the Central Facsimile (FAX) Number will change from 703-872-9306 to 571-273-8300. Faxes sent to the old number will be routed to the new number until September 15, 2005. After September 15, 2005, the old number will no longer be in service and 571-273-8300 will be the only facsimile number recognized for "centralized delivery." The official notice dated June 20, 2005 also includes an "updated list of exceptions to the centralized delivery and facsimile transmission policy for patent related correspondence." Questions regarding this notice may be e-mailed to PatentPractice@uspto.gov, or directed to the Inventors' Assistance Center by telephone at 800-786-9199, or 571-272-1000.

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Please label "PROPOSED" or "DRAFT" for informal facsimile communications. For after final responses, please label "AFTER FINAL" or "EXPEDITED PROCEDURE" on the document.

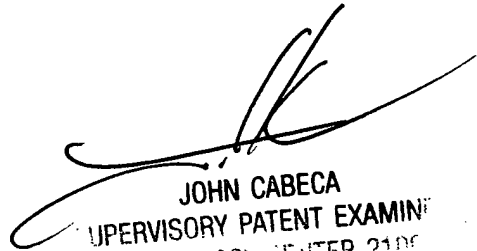
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Namitha Pillai whose telephone number is (571) 272-4054. The examiner can normally be reached on 8:30 AM - 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Cabeca can be reached on (571) 272-4048.

All Internet e-mail communications will be made of record in the application file. PTO employees do not engage in Internet communications where there exists a possibility that sensitive information could be identified or exchanged unless the record includes a properly signed express waiver of the confidentiality requirements of 35 U.S.C. 122. This is more clearly set forth in the Interim Internet Usage Policy published in the Official Gazette of the Patent and Trademark on February 25, 1997 at 1195 OG 89.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-3800.

Namitha Pillai
Assistant Examiner
Art Unit 2173
July 18, 2005



JOHN CABECA
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